

ABSTRACT

An I/O device is provided for use in a process control system having a controller operating under a particular version of communication software. The I/O device has a storage device for storing a plurality of potential versions of I/O communication software. An I/O device processor determines the particular version of I/O communication software utilized by the controller and configures the I/O device to operate using a compatible version of I/O communication software stored in the storage device. Further, an I/O device is provided for use in a process control system including a plurality of I/O devices and a controller in communication using a bus. The I/O device has an interface for communicatively linking the I/O device with the bus, where a device processor, upon detection of a potential I/O device fault, severs the communication link provided by the interface with the bus. Additionally, a process control system is provided having a plurality of I/O devices in communication using a bus. A primary redundant device and a secondary redundant device are coupled to the bus, where the secondary redundant device is programmed to detect a primary redundant device fault. The secondary redundant device, upon detecting the primary redundant device fault, publishes a primary redundant device fault message on the bus. The controller may deactivate the primary redundant device and activate the secondary redundant device responsive to the primary redundant device fault message.